

Claims:

1. (Previously Presented) A bipolar electrosurgical instrument comprising:
  - an introducer having a handle portion and an outer shaft coupled to the handle portion, the introducer having a channel extending therein from an opening at a distal end of the introducer;
  - a snare slidably positionable within the channel and slidable between an undeployed position wherein it is substantially retracted within the channel and a deployed position wherein a distal portion of the snare extends outwardly from the channel, wherein at least the distal portion of the snare is insulated substantially along its length except for a predetermined exposed section;
  - a first electrically conductive member for coupling with a source of RF energy, the first electrically conductive member being positioned within the snare and having an active electrode exposed through the predetermined exposed section of the snare;
  - a second electrically conductive member for coupling with a grounding element, the second electrically conductive member being positioned within the snare and having a return electrode portion exposed through the predetermined exposed section of the snare;
  - a retention element at a distal end of the snare for securing the distal end of the snare to the introducer to thereby form a looped configuration of the snare; and
  - at least one fluid delivery channel extending through the introducer between a fluid inlet at the proximal end of the introducer and a fluid outlet at the distal end of the introducer that is located in proximity to the exposed section of the snare;
  - wherein the active electrode has a surface area sufficiently smaller than the return electrode such that application of RF energy to the active electrode causes vaporization of fluid between the active and return electrodes, forming a plasma bubble substantially adjacent to the active electrode.
2. (Original) The instrument according to claim 1, further comprising an inner shaft positioned substantially concentrically and within the outer shaft, the inner shaft having a channel extending therethrough, and the snare being positionable within the inner shaft channel, and the outer and inner shafts being rotatable relative to one another.

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3. (Original) The instrument according to claim 2, wherein the outer shaft has a first aperture therein and the inner shaft has a second aperture therein.
4. (Original) The instrument according to claim 3, wherein the outer and inner shafts are rotatable relative to one another to a first position wherein the first and second apertures are substantially aligned and sized and shaped to receive therein the snare retention element.
5. (Original) The instrument according to claim 4, wherein the outer and inner shafts are rotatable relative to one another to a second position wherein the first and second apertures have a reduced overlapping area of a size and shape sufficient to allow the snare but not the snare retention element to pass therethrough.
6. (Original) The instrument according to claim 5, further comprising a knob coupled to the inner shaft for rotating the inner shaft relative to the outer shaft.
7. (Original) The instrument according to claim 1, wherein the at least one fluid delivery channel extends through the snare and is exposed at the predetermined exposed section of the snare.
8. (Original) The instrument according to claim 1, wherein the predetermined exposed section is on one side of the snare.
9. (Original) A method for electrosurgically transecting tissue comprising:  
providing an electrosurgical instrument including an introducer having a handle portion and an outer shaft portion coupled to the handle portion, and having a channel extending therein from an opening at a distal end of the introducer, and further having an electrically conductive snare that is couplable to a source of RF energy and that is slidably positionable within the channel, and a retention element at a distal end of the snare, the electrically conductive snare being substantially insulated except for at a predetermined exposed area;

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with the snare in an undeployed position wherein it is substantially retracted within the channel, positioning the introducer in the vicinity of a target tissue;  
slidably moving the snare from the undeployed position to a deployed position wherein a distal portion of the snare extends outwardly from the channel;  
securing the retention element to the introducer to thereby form a looped configuration of the snare around the target tissue;  
contacting the target tissue with the exposed area of the snare;  
supplying an electrically conductive fluid to the vicinity of the target tissue and applying RF energy to the snare to thereby transaction the target tissue.

10. (Original) The method according to claim 9, wherein the electrosurgical instrument further includes at least one fluid delivery channel extending through the introducer between a fluid inlet at the proximal end of the introducer and a fluid outlet at the distal end of the introducer that is located in proximity to the exposed section of the snare.

11. (Original) The method according to claim 10, wherein the at least one fluid delivery channel extends through the snare and is exposed at the predetermined exposed section of the snare.

12. (Original) The method according to claim 9, wherein the instrument further includes an inner shaft positioned substantially concentrically and within the outer shaft, the inner shaft having a channel extending therethrough and the snare being positionable within the inner shaft channel, and the outer and inner shafts being rotatable relative to one another.

13. (Original) The method according to claim 12, wherein the inner and outer shafts further have first and second apertures therein respectively, and wherein the step of securing the retention element further comprises substantially aligning the first and second apertures, inserting the retention element into the inner shaft channel through the first and second apertures, and rotating the inner and outer shafts relative to one another to thereby secure the retention element within the inner shaft channel.

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14. (Original) The method according to claim 9, further comprising, after transecting the tissue, moving the snare from the deployed position to the undeployed position, and removing the instrument from the vicinity of the target tissue.

15. (Previously Presented) A bipolar electrosurgical instrument comprising:  
an introducer having a channel therein extending from an opening at a distal end thereof;

an electrically conductive snare slidably positioned within the channel and slidable between an undeployed position wherein it is substantially retracted within the channel and a deployed position wherein a distal portion of the snare extends outwardly from the channel, the electrically conductive snare being substantially insulated but for a predetermined exposed section, and having an active and a return electrode exposed through said exposed section;

a retention element at a distal end of the snare for securing the distal end of the snare to the introducer to thereby form a looped configuration of the snare; and

at least one fluid delivery channel extending through the introducer between a fluid inlet and a fluid outlet at the distal end of the introducer and located in proximity to the exposed section of the snare;

wherein the active electrode has a surface area sufficiently smaller than the return electrode such that, application of RF energy to the active electrode causes vaporization of fluid between the active and return electrodes, forming a plasma bubble substantially adjacent to the active electrode.

16. (Original) The instrument according to claim 15, wherein the introducer further includes a handle portion and an outer shaft adjacent to and extending from the handle portion.

17. (Original) The instrument according to claim 16, further comprising an inner shaft positioned substantially concentrically and within the outer shaft, wherein the snare is slidably positioned within the inner shaft.

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18. (Original) The instrument according to claim 17, wherein the inner and outer shafts have first and second apertures therein respectively, and wherein the inner and outer shafts are rotatable relative to one another to a first position wherein the first and second apertures are substantially aligned, and a second position wherein the first and second apertures are not substantially aligned.

19. (Original) The instrument according to claim 18, wherein, when the inner and outer shafts are in the first position, the retention element is insertable through the first and second apertures into an interior of the inner shaft, and wherein when the inner and outer shafts are in the second position, the retention element is not insertable into the interior of the inner shaft.

20. (Original) The instrument according to claim 15, wherein the at least one fluid delivery channel extends through the snare and is exposed at the predetermined exposed section of the snare.

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